

ISM 482

EIGHT INPUT, TWO OUTPUT INTEGRATION SCALING MATRIX SWITCHER



- Eight fully configurable inputs
- Two independent, high performance scaled outputs
- Optional DVI output card
- 40 selectable output rates up to 1400x1050
- Triple-Action Switching™ for RGB delay
- DMI™ - Dynamic Motion Interpolation
- 3:2 and 2:2 pulldown detection
- AFL™ - Accu-RATE Frame Lock
- Balanced and unbalanced audio
- Audio breakaway
- RS-232 serial control
- IP Link® Ethernet control and monitoring
- Internal international power supply

The Extron ISM 482 is an eight input, RGB and video matrix switcher with two independent, high-performance scaled outputs. It accepts all common analog video signals from composite video to RGBHV and outputs computer-video at rates up to 1400x1050. The ISM 482 is the ideal solution for use in dual-display videoconferencing and presentation environments such as boardrooms, conference rooms, classrooms, courtrooms, auditoriums, and houses of worship.



Extron® Electronics
www.extron.com

DESCRIPTION

The Extron **ISM 482** Integration Scaling Matrix Switcher has eight configurable inputs and two audio/video outputs with built-in, high performance video scalers. It provides flexibility in selecting output resolution to two different displays. The ISM 482 is the ideal solution for use in dual-display videoconferencing and presentation environments such as boardrooms, conference rooms, classrooms, courtrooms, auditoriums, and houses of worship.

The ISM 482 features several proprietary Extron technologies for superior scaling, including 3:2 and 2:2 film pulldown detection, DMI - Dynamic Motion Interpolation, and AFL - Accu-RATE Frame Lock. The ISM 482 also switches balanced and unbalanced stereo audio signals. Control options include RS-232 serial port or IP Link Ethernet port.

FEATURES

- **40 selectable output rates from 640x480 to 1400x1050** – The ISM 482 offers 40 user-selectable computer-video output rates, from 640x480 to 1400x1050 and including HDTV 720p/60.
- **DMI - Dynamic Motion Interpolation** – DMI technology is an advanced motion detection and compensation method used to deliver the best aspects of still and motion algorithms. This process results in a superior level of image enhancement capability with no loss of image fidelity.
- **3:2 NTSC and 2:2 PAL pulldown detection** – Advanced film mode processing techniques which help maximize image detail and sharpness for NTSC or PAL sources that originated from film.
- **AFL - Accu-RATE Frame Lock** – A patented technology exclusive to Extron that solves frame rate conversion issues experienced by video scalers. When video input and output refresh rates differ, there are certain points in time when the two rates cross over each other. The result is a glitch or image freeze on the display. AFL solves this problem by locking the output frame rate to the input frame rate.
- **Triple-Action Switching for RGB delay** – Blanks the screen when switching to a new source. The new sync signals precede the RGB signals, so there is no glitch shown during the transition. The time delay between the RGB and sync signals is adjustable up to five seconds.
- **Picture controls** – Brightness, contrast, horizontal and vertical shift, horizontal and vertical centering, freeze frame, eight user-selectable levels of horizontal filtering, and five user-selectable levels of vertical filtering are provided and stored for each input.
- **Internal test patterns for calibration and set-up** – Ten test patterns are available, including a crop pattern, crosshatch, 16 bar grayscale, color bars, alternating pixels, ramp, 4 x 4 crosshatch for use with video walls, and three film aspect ratio patterns - 1.78, 1.85, and 2.35 - for setting up widescreen source material. It also features a blue-only mode for proper setup of video color and tint levels.
- **QS-FPC™ - QuickSwitch Front Panel Controller** – Provides a discrete button for each input and output, allowing for simple, intuitive operation.

FEATURES (Cont.)

- **16 auto-memory presets per input** – Each input supports 16 auto-recall memory presets, based on the incoming horizontal and vertical frequencies. These presets recall sizing, centering, detail, contrast, and brightness information for each source, saving time and effort in fine-tuning displayed images.
- **Front panel input label windows** – Input buttons may be easily labeled by any Brother® P-Touch™ labeler or by Extron label software, which ships with every Extron matrix switcher. Each input can be labeled with names, alphanumeric characters, or color bitmaps for easy input/output selection.
- **Switches balanced and unbalanced stereo audio** – Accepts both balanced and unbalanced stereo audio signals on captive screw connectors.
- **Audio input gain and attenuation** – Allows users to set the level of gain or attenuation for each audio input channel, eliminating noticeable volume differences when switching between sources.
- **Audio breakaway** – Provides the capability to break an audio signal away from its corresponding video signal, allowing the audio and video signals from one source to be switched to different destinations.
- **IP Link Ethernet control and monitoring** – An IP integration technology developed by Extron, specifically engineered to meet the needs of professional A/V environments, which enables the ISM 482 to be managed and proactively monitored over a LAN, WAN, or the Internet. An intuitive Web interface is included for such common functions as I/O switching, online diagnostics, and monitoring.
- **Windows® control software included** – For RS-232 remote control from a PC, Extron includes Windows-based control software with every matrix switcher. This icon-driven software uses a graphical drag-and-drop interface to make I/O configuration and other customization functions simple and convenient.
- **RS-232 serial control port** – Using serial commands, the ISM 482 can be controlled and configured via the Extron Windows-based control program, or integrated into third-party control systems. Extron products use the SIS™ - Simple Instruction Set command protocol, a set of basic ASCII code commands that allow for quick and easy programming.
- **Front panel security lockout** – This feature locks out all front panel functions except basic switching and control commands; all functions however, are available through RS-232 control.
- **Rack-mountable 3U, full rack width metal enclosure**
- **Optional DVI-D output** – An optional DVI-D output can be installed to support newer, DVI - Digital Visual Interface equipped displays. The DVI output parallels Output 1.
- **Internal international power supply** – The 100-240VAC, 50/60 Hz, autoswitchable internal power supply provides worldwide power compatibility.

VIDEO	
Routing	8 x 2 matrix
VIDEO INPUT	
Number/signal type	8 RGBHV, RGBS, RGsB, RGBcvs, component video, S-video, composite video
Connectors	8 x 5 female BNC
Nominal level	1 Vp-p for Y of component video and S-video, and for composite video 0.7 Vp-p for RGB and for R-Y and B-Y of component video 0.3 Vp-p for C of S-video
Minimum/maximum levels	Analog: 0 V to 1.0 Vp-p with no offset
Impedance	75 ohms
Horizontal frequency	Autoscan 15 kHz to 100 kHz (RGB)
Vertical frequency	Autoscan 50 Hz to 100 Hz
Resolution range	Autoscan 720x525 to 1600x1200*
*Input resolutions above 1400x1050 are undersampled.	
VIDEO PROCESSING	
Decoder	9 bit digital
Digital sampling	24 bit, 8 bits per color; 13.5 MHz standard (video), 140 MHz standard (RGB)
Colors	16.78 million
Horizontal filtering	4 levels
Vertical filtering	8 levels
VIDEO OUTPUT	
Number/signal type	2 scaled RGBHV, RGBS
Connectors	2 x 5 BNC female, (2) 15-pin HD female
Nominal level	0.7 Vp-p for RGB
Minimum/maximum levels	0 V to 0.7 Vp-p
Impedance	75 ohms
Scaled resolutions	640x480 ^{1,3,4,6} , 800x600 ^{1,3,4,6} , 832x624 ^{3,4,6} , 848x480 ^{3,6} , 852x480 ^{3,6} , 1024x768 ^{1,3,4,5,6} , 1280x768 ^{2,6} , 1280x1024 ^{1,3} , 1360x765 ^{3,6} , 1365x1024 ^{3,6} , 1366x768 ^{3,6} , 1400x1050 ^{1,3,6} , 576p ^{1,6} , 720p ^{3,6} ¹ = at 50 Hz ² = at 56 Hz ³ = at 60 Hz ⁴ = at 75 Hz ⁵ = 85 Hz ⁶ = locked to the current input's vertical refresh rate (Accu-RATE Frame Lock™)
Return loss	-30 dB @ 5 MHz
DC offset	±5 mV with input at 0 offset
SYNC	
Input type	Autodetect RGBHV, RGBS, RGsB, RGBcvs
Output type	RGBHV, RGBS
Standards	NTSC 3.58, NTSC 4.43, PAL, SECAM
Input level	0 V to 5.0 Vp-p
Output level	0 V to 5.0 Vp-p, unterminated
Input impedance	510 ohms
Output impedance	75 ohms
Max input voltage	5.0 Vp-p
Max. propagation delay	20 ns
Polarity	Positive or negative (selectable)
AUDIO	
Routing	8 x 2 stereo matrix
Gain	Unbalanced output: 0 dB; balanced output: +6 dB
Frequency response	20 Hz to 20 kHz, ±0.05 dB
THD + Noise	0.03% @ 1 kHz at nominal level
S/N	>90 dB at maximum output (unweighted)

Crosstalk	<-80 dB @ 1 kHz, fully loaded
Stereo channel separation	>90 dB @ 1 kHz
CMRR	>75 dB @ 20 Hz to 20 kHz

AUDIO INPUT

Number/signal type	8 stereo, balanced/unbalanced
Connectors	(8) 3.5 mm captive screw connectors, 5 pole
Impedance	>10k ohms unbalanced/balanced, DC coupled
Nominal level	Configurable: -60 dBV (1 mVrms), +4 dBu (1.23 Vrms), 0 dBu (0.775 Vrms), -10 dBV (316 mVrms), -20 dBV (100 mVrms)
Maximum level	+19.5 dBu, (balanced or unbalanced) at 1%THD+N
Input gain adjustment	-24 dB to +9 dB, adjustable per input
NOTE: 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu.	

AUDIO OUTPUT

Number/signal type	2 stereo, balanced/unbalanced
Connectors	(2) 3.5 mm captive screw connectors, 5 pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.1 dB channel to channel
Maximum level (Hi-Z)	>+21 dBu, balanced or unbalanced at 1% THD+N
Maximum level (600 ohm)	>+15 dBm, balanced or unbalanced at 1% THD+N

CONTROL/REMOTE – SWITCHER/SCALER

Serial control port	RS-232, 9-pin female D connector
Baud rate and protocol	9600 baud, 8 data bits, 1 stop bit, no parity
Serial control pin configurations	2 = TX, 3 = RX, 5 = GND
Ethernet control port	1 RJ-45 female connector
Ethernet data rate	10/100Base-T, half/full duplex with autodetect
Ethernet protocol	ARP, ICMP (ping), TCP/IP, Telnet
Program control	Extron's control/configuration program for Windows® Extron's Simple Instruction Set (SIS™) Microsoft® Internet Explorer, Telnet

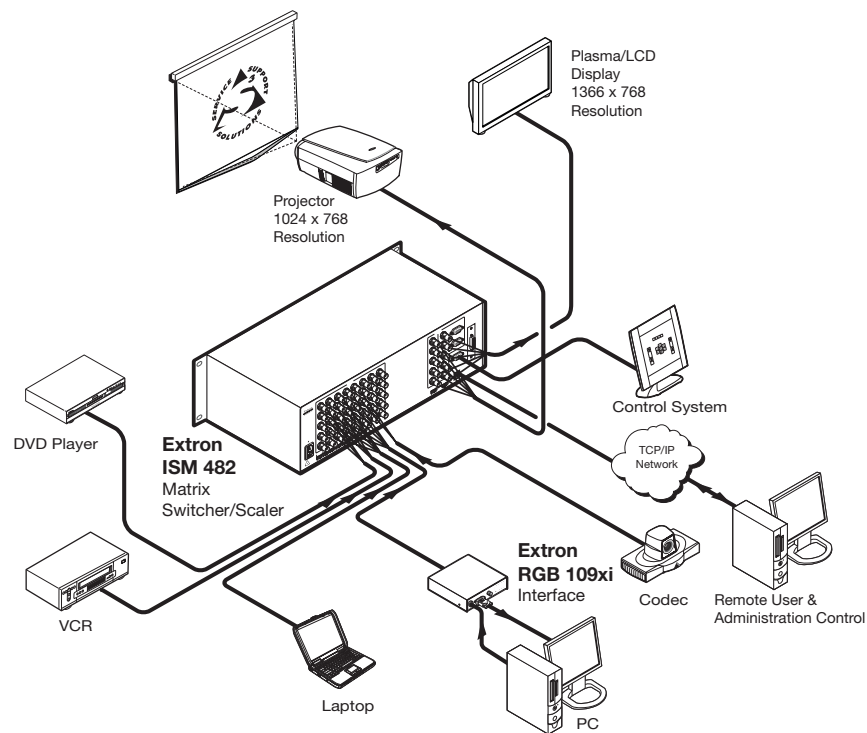
GENERAL

Power	100 VAC to 240 VAC, 50/60 Hz, 60 watts, internal, autoswitchable
Rack mount	Yes
Enclosure type	Metal
Enclosure dimensions	5.25" H x 17.5" W x 11.2" D (3U high, full rack wide) 13.3 cm H x 48.3 cm W x 28.4 cm D (Depth excludes connectors and knobs. Width excludes rack ears.)
Product weight	11.2 lbs (5.1 kg)
Shipping weight	17 lbs (8 kg)
DIM weight	
USA/Canada	18 lbs (9 kg)
International	21 lbs (10 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Listings	UL, CUL
Compliances	CE, FCC Class B
MTBF	30,000 hours
Warranty	3 years parts and labor
NOTE: All nominal levels are at ±10%	

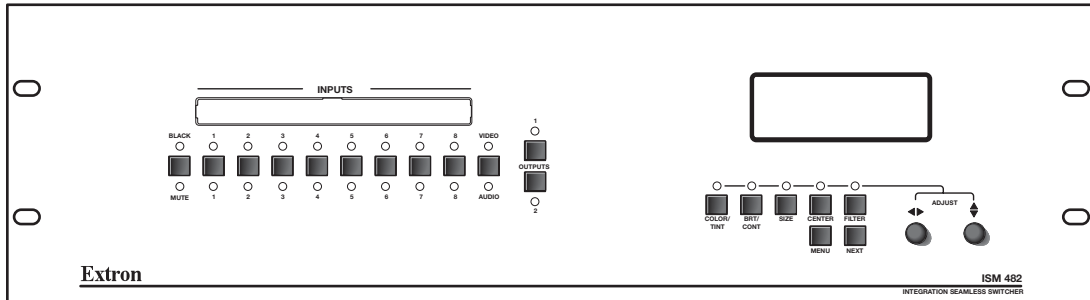
Model	Version Description	Part Number
ISM 482	8x2 Scaling Matrix Switcher	60-425-01

Specifications are subject to change without notice.

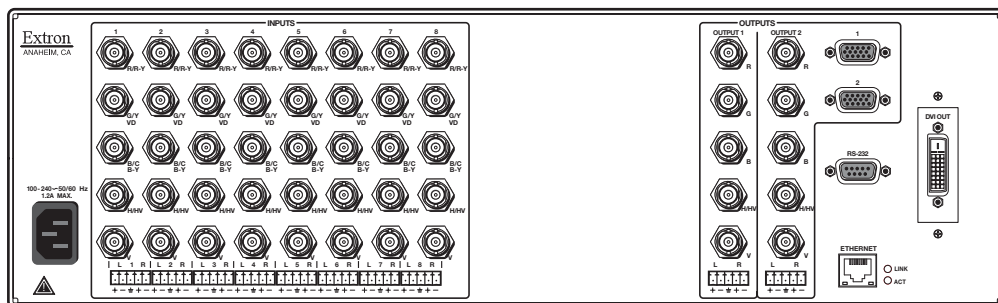
APPLICATION DIAGRAM



PANEL DRAWINGS



ISM 482 - Front



ISM 482 - Back

Shown with optional DVI Output Board, Part Number 70-244-01



Extron USA - West
Headquarters
+800.633.9876
Inside USA / Canada Only
+1.714.491.1500
+1.714.491.1517 FAX

Extron USA - East
+800.633.9876
Inside USA / Canada Only
+1.919.863.1794
+1.919.863.1797 FAX

Extron Europe
+800.3987.6673
Inside Europe Only
+31.33.453.4040
+31.33.453.4050 FAX

Extron Middle East
+971.4.2991800
+971.4.2991880 FAX

Extron Asia
+800.7339.8766
Inside Asia Only
+65.6383.4400
+65.6383.4664 FAX

Extron Japan
+81.3.3511.7655
+81.3.3511.7656 FAX

Extron China
+400.883.1568
Inside China Only
+86.21.3760.1568
+86.21.3760.1566 FAX